WHAT IS CLAIMED IS:

1. An exposure apparatus, comprising:

a light source;

an illumination optical system illuminating an original on which a pattern is formed by the exposure light emitted from said light source;

a projection optical system projecting the pattern to a photosensitive object;

a first photodetector, disposed in a portion for receiving light from an optical path between said light source and a portion where the original is placed, said first photodetector being used for monitoring an emission light amount from said light source; and

a processing system (i) obtaining information regarding light exposure provided to at least an optical element included in one of said illumination optical system and said projection optical system, (ii) estimating a change in transmittance of at least the optical element on the basis of the information obtained, and (iii) correcting a proportional coefficient for the light amount detected by said first photodetector and the emission light amount from said light source on the basis of the estimated change of transmittance.

2. An exposure apparatus according to Claim 1, wherein said processing system further performs sensitivity correction of said first photodetector relative to an illuminance on a plane corresponding to a surface of the photosensitive object on the basis of the estimated change of transmittance.

3. An exposure apparatus according to Claim 1, further comprising a stage movable in a direction orthogonal to an optical axis of said illumination optical system, on which the original is placed, and a second photodetector disposed near the photosensitive object, wherein said second photodetector detects the exposure light passing through a light transmitting portion of said stage placed at a position different from that of a portion where the pattern is positioned.

4. An exposure apparatus according to Claim 1, wherein said processing system estimates the change in transmittance on the basis of at least one of a detection result of said first photodetector, information regarding an illumination extent of said illumination optical system, and information regarding transmittance of the original.

5. An exposure apparatus according to Claim 1, wherein

said light source includes one of a KrF excimer laser, an ArF excimer laser, and an F_2 laser.

6. An exposure apparatus according to Claim 1, wherein said light source has a pulsed laser, said illumination optical system has an ND filter and masking blades for determining an illumination extent, and said processing system estimates changes in the transmittances of said illumination optical system and said projection optical system on the basis of information regarding output energy per pulse, an oscillation frequency and oscillation duty of said pulsed laser, a voltage applied to said pulsed laser, a transmittance of said ND filter and the original, and the illumination extent formed by said masking blades.

7. An apparatus according to Claim 1, further comprising a second photodetector, disposed near the photosensitive object, having a light receiving surface positioned at the same height as a surface of the photosensitive object, wherein said processing system further performs sensitivity corrections of said first photodetector and said second photodetector on the basis of the estimated change in transmittance.

8. A method for producing devices by use of an

exposure apparatus, said method comprising the steps of:

illuminating, with an illumination optical system, an original on which a pattern is formed by exposure light from a light source;

projecting, with a projection optical system, the pattern to a photosensitive object;

receiving light by a first photodetector from an optical path between the light source and a portion where the original is placed;

monitoring, by the photodetector, an emission light amount from the light source;

obtaining information regarding light exposure provided to at least an optical element included in one of the illumination optical system and the projection optical system;

estimating a change in transmittance of at least the optical element on the basis of the information obtained;

correcting a proportional coefficient for the light amount detected by the first photodetector and the emission light amount from the light source on the basis of the estimated change of transmittance; and

developing the photosensitive object with a projected pattern, a circuit device being produced from the developed object,

wherein said illuminating step is performed on the

basis of the corrected proportional coefficient for the first photodetector.

9. A method according to claim 8, further comprising correcting the sensitivity of the first photodetector relative to an illuminance on a plane corresponding to a surface of the photosensitive object on the basis of the estimated change of transmittance.

10. A method according to Claim 8, wherein said estimating step is performed on the basis of at least one of a detection result of the first photodetector, information regarding an illumination extent of the illumination optical system, and information regarding transmittance of the original.

11. A method according to Claim 8, wherein said estimating step is performed on the basis of monitoring results of the change of a ratio of an output of the first photodetector to a voltage applied to the light source.

12. A method for exposing an original and for projecting a pattern formed on the original onto a photosensitive object, said method comprising the steps of:

illuminating, with an illumination optical system, the

original by exposure light from a light source;

projecting, with a projection optical system, the pattern of the original onto the photosensitive object;

receiving light by a first photodetector from an optical path between the light source and a portion where the original is placed;

monitoring, by the photodetector, an emission light amount from the light source;

obtaining information regarding light exposure provided to at least an optical element included in one of the illumination optical system and the projection optical system; and

correcting a proportional coefficient for the light amount detected by the first photodetector and the emission light amount from the light source on the basis of a change in transmittance;

wherein said illumination step is performed by using the corrected proportional coefficient for the first photodetector.

13. A method according to Claim 12, further comprising correcting the sensitivity of the first photodetector relative to an illuminance on a plane corresponding to a surface of the photosensitive object corresponding to the change of transmittance.